

REMARKS

The Applicant wishes to thank the Examiner for his time spent in preparing the office action of May 22, 2008. Claims 1-20 are pending in the application.

Drawings

The office action objects to the drawings because, as it alleges, the drawings fail to show every feature of the invention specified by the claims. More particularly, the office action argues that the drawings fail to show the manner in which the weld is placed to redistribute strain in the corner of a polygonal hollow section. The Applicant believes this objection relates to claim 17 and that the office action mistakenly refers to claim 19.

Furthermore, the Applicant believes the office action is mistaken in objecting to the drawings because Figure 34 depicts an example of a welding technique which may be used to redistribute strain. *See page 21, lines 7-11.* To redistribute strain the specification and drawings explain that extra weld layers can be added to the corner. Figure 16 depicts a model of the affect of the extra layers of weld on the strains at the corner. *See also page 23, line 6 to page 27, line 28.*

Nonetheless, the Applicant has further clarified the disclosure by amending the drawings and the specification to include reference numerals 342 and 344 (and arrows), referring to the extra weld beads in Figure 34. A replacement sheet and a marked-up sheet for drawing sheet 12 is provided with this response.

Claim Objections

The office action objects to the use of undefined acronyms in the claims. The Applicant has amended claims 2-4, 6, 7, 9, 15-18, and 20 to define acronyms RHS, SHS, and PHS.

35 U.S.C. § 112

The office action rejects claims 1, 17, and 18 because the term “the step” does not have antecedent basis. The Applicant has amended the claims and has removed these terms from the claims.

The office action rejects claims 4-6 because the phrase “the continuous weld” lacks antecedent basis. Claims 4-6 have been amended and this phrase has been replaced with the phrase, “the weld that extends continuously.” This new language has proper antecedent basis because claim 1 defines a “weld extending continuously.”

The office action also rejects claim 6 because the phrases “the connection weld bead” and “spaced weld beads” do not have antecedent basis. The claim is amended so that the “connection weld bead” is introduced with the article “a.” The claim is also amended to replace the “spaced weld beads” with a “spaced well bead.” A “spaced well bead” has antecedent basis because the second element of the claim defines a weld bead applied “across the flange that is spaced from a connection weld bead.”

The office action argues that the limitation in claim 8 requiring “a spaced weld bead” implies that there is another “spaced weld bead.” As amended, the claim now requires “the spaced weld bead.”

The office action argues that the language in claim 9 “the first intermediate weld bead” lacks antecedent basis. The claim is amended so that the “first intermediate weld bead” is introduced with the article “a.”

The office action also rejects claim 10 because the phrase “that intermediate weld” does not have antecedent basis. Claim 10 is amended to require “the intermediate weld.”

The office action argues that the language in claim 12 “the peripheral end” lacks antecedent basis. The claim is amended so that the “peripheral end” is introduced with the article “a.”

The office action rejects claim 17 as unclear and indefinite because neither the drawings nor the specification explain what this claim encompasses. Applicant believes that the office action misconstrues the definiteness requirement. Section 112, first paragraph requires that “the claims particularly point out and distinctly claim the invention,” not the specification. *See MPEP 2173*. Nonetheless, as explained above, Figures 16 and 34 provide guidance on the scope of the claims. To redistribute strain the specification and drawings explain that extra weld layers can be added to the corner. The passage at page 23, line 6 to page 27, line 28 provides further guidance on the scope of the claim. A person skilled in the art, when reading the claim in conjunction with the

specification, would be able to clearly understand this claim. Furthermore, the office action's assumption that the weld "wraps around the 2 corners adjacent to the flange and stops at a point where the next flange begins" is inappropriate. The office action has provided no basis for such an assumption. Limitations should not be imported from the specification into the claims. *See MPEP 2106 (II)(C)*.

The office action also rejects claim 18 because the limitation requiring "a fracture zone adjacent an internal end of the weld" is unclear. The office action argues that it is not clear how a weld can have an "internal end." As amended, the claim now simply requires "a fracture zone adjacent to the weld."

35 U.S.C. § 102

The office action rejects claims 1-4, 15-16 and 19-20 as anticipated by Japanese Publication 2002-172462 to Tadateru. The office action argues that the limitations of claim 1 are met by Tadateru, which discloses the welding of a joint between a tubular member and a diaphragm by welding a flange of a pipe to the other member. Further the office action states that the weld beads are applied transversely across the face of the weld groove to fill the groove in, and then on the surface of the flange (in the range of 5-15 mm). The office action refers to these additional welds as "build up."

Claim 1 is allowable over Tadateru for at least two reasons. First, Tadateru does not disclose the forming of a continuous weld across a surface of a polygonal hollow section, as required by claim 1. As identified by the office action, the weld beads of Tadateru are applied across the face of the weld groove to fill it in. This is different than forming a continuous weld across a surface of the polygonal hollow section as is claimed in present claim 1. *See, for example, Figures 11, 24, and 34.*

Additionally, Tadateru does not disclose a "weld extending continuously across the surface from a connection weld connecting the PHS and the member to a location that is remote from the connection weld." As explained above, in Tadateru, additional welds are "built up" on the weld groove. Tadateru does not extend a weld "to a location that is remote from the connection weld," as required by claim 1. Thus, claim 1 is allowable over Tadateru for at least these two reasons.

35 U.S.C. § 103

The Examiner further rejects claims 5-12, 13, 14, and 17 as obvious in view of Tadateru. The limitations in these claims further demonstrate the differences between the method defined by the claims and the welding technique defined by Tadateru. For example, claim 6 requires applying a connection weld across the polygonal hollow section and a weld spaced from the connection weld. An intermediate weld is applied to “to define the weld that extends continuously between the connection weld and the spaced weld.” The Examiner argues that the connection weld, the intermediate weld, and the spaced weld are inherently disclosed in Tadateru. Although Tadateru may inherently disclose multiple passes, the connection weld (root pass) and intermediate weld beads (filler passes) taught by Tadateru are structurally different that the welds required by claim 6. The connection pass (root pass) in Tadateru is designed to fill the gap between the diaphragm 20 and the tube 11, and the filler passes are performed to essentially fill in this gap or groove. These filler passes cannot be considered as intermediate weld beads as disclosed in the present application. The build up referred to by the Examiner is additional and in conjunction to a groove weld. Build up cannot exist unless there is a groove weld for it to be built up upon. In contradistinction, the intermediate weld of claim 6 defines a weld that extends continuously between the connection weld and the spaced weld. *See, for example, Figure 34.* There is, thus, clear differentiation between the connection weld and weld beads of the present application and the root pass and filler passes of Tadateru.

The Examiner also rejects claims 8, 9, and 18 as obvious in view of Tadateru in combination with Linnert. The Examiner cites the Linnert reference as suggesting the sequence of welds defined in the claims. The Examiner argues that it would have been obvious to a person of ordinary skill in the art to place the spaced weld bead first so as to temper the spaced weld bead and reduce the likelihood of cracking in that region of the weld. The use of forward and backward weld sequences is disclosed in the present application at page 8, line 16 to page 9, line 4. Specifically, the specification explains that “it has been surprisingly discovered that the formation and location of a heat-affected zone is significantly less detrimental when the backward technique is used.” It is further discussed in the passage at page 21, lines 12-29, which explains that the backward

“sequence avoided heat accumulation in the flange area adjacent to the buffer weld.” This is not the same effect achieved by tempering, as has been identified by the Examiner. In fact, the Linnert reference teaches away from claims 8, 9, and 18 by suggesting the addition of heat to the spaced weld bead. Whereas, in direct contradistinction, claim 8, 9, and 18 allow for dissipation of heat from the spaced weld bead. Claims 8, 9, and 18 are, thus, allowable over the combination of Tadateru and Linnert because Linnert teaches away from the claims.

Moreover, Linnert does not resolve the deficiencies of Tadateru. Particularly, Tadateru also does not disclose forming a continuous weld across a surface of the polygonal hollow section. Also, Linnert does not disclose a “weld extending continuously across the surface from a connection weld connecting the PHS and the member to a location that is remote from the connection weld,” as required by claim 1. Therefore, claim 1 is also allowable over the combination of Tadateru and Linnert because the combination fails to disclose at least two limitations required by claim 1.

Claims 2-16, 19, and 20 depend from claim 1 and are, therefore, allowable for similar reasons. Claims 17 requires forming a weld that redistributes strain to an adjacent flange of the polygonal cross section. Accordingly, the arguments for claim 1 apply equally to claim 17, and therefore, claim 17 is also allowable for similar reasons. Accordingly, all of the pending claims are allowable over the cited prior art references.

The Applicant requests issuance of a notice of allowance. The Applicant believes that a three month extension of time is required for consideration of this response. Please charge deposit account number 19-4972 for the extension of time. If any additional fees are required for the timely consideration of this response, please further charge deposit the same account number.

Respectfully submitted,

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